Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Cogeneration Plant - Westlake Facility
Basell USA Inc.
Westlake, Calcasieu Parish, Louisiana
Agency Interest Number: 1253
Activity Number: PER20080002
Proposed Permit Number: 2868-V1

I. APPLICANT

Company:
Basell USA Inc. – Cogeneration Plant - Westlake Facility
PO Box 1687
Lake Charles, Louisiana 70602-1687

Facility:
Basell USA Inc.
4101 Hwy 108
Westlake, Calcasieu Parish, Louisiana

II. FACILITY AND CURRENT PERMIT STATUS

Basell USA, Inc. (formerly Himont USA, Inc.; changed name to Montell USA, Inc. in August 1995. Montell USA, Inc. changed name to Basell USA, Inc. in October 2000) owns and operates the facility located in Westlake, Calcasieu Parish, Louisiana.

Basell USA Inc. - Westlake Facility is a designated Part 70 source. Three Part 70 permits have been issued to the operating units within the Westlake Facility. These include:

Permit No.	Unit or Source	Date Issued
0520-00006-V1	Plant No. 5	10/21/2005
2868-V0	Boilers	12/01/2003
2109-V4	M-Line Plant	01/09/2008

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III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by Basell USA Inc. dated April 28, 2008 requesting a Part 70 operating permit renewal/modification for Boilers unit.

Project

Basell proposes to install a cogeneration plant at the existing Westlake facility to generate steam and electricity for the plant's operational needs. Basell currently buys about 32 MW of electricity for the facility's needs. The primary goal of the cogeneration facility is to self-generate electricity and realize significant cost savings (7- 8 million dollars a year). Basell is also proposing to permanently decommission the three existing steam boilers (Emission Points 1-75, 2-75, and 3-75) since the steam demand will be met by the proposed cogeneration facility. The Cooling Tower (Emission Point 6-99) will also be removed from the facility since the Cogeneration Plant will utilize air-cooling systems.

The proposed cogeneration plant's new equipment will include two spark ignition reciprocating internal combustion engines (SI RICEs), two fire-tube package boilers, and a turbine. Each of the two SI RICEs have a design power output rating of around 8 MW and the turbine has a design power output rating of around 14 MW, resulting in design total of 30 MW of the self-generated electricity. The cogeneration plant is expected to meet 96% of the facility's electricity needs. Basell intends to supplement the facility's electricity needs by purchasing approximately 4 MW of electricity from Entergy to fill any resulting shortage from the proposed operations.

Basell's vent gas compressor, equipped with an electrical prime mover, compresses the off-gases from various process vents at Basell's Westlake facility and discharges the pressurized gas to the steam boilers. If the compressor fails, the gases are automatically sent to the vent gas flare stack. With the proposed construction of the Cogeneration Plant, the vent gas compressor is proposed to be operated in the same manners currently.

This permit also includes existing equipment – the Aeration Basin which is a wastewater source that was previously permitted as part of the Plant 4 process. The plant 4 was shutdown in March 2002.

Proposed Permit

Permit 2868-V1 will be the renewal/modification Part 70 operating permit 2868-V0 for the Basell Cogeneration Plant.

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Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	5.94	14.32	+ 8.38
SO_2	0.40	1.59	+ 1.19
NO_X	199.00	147.34	- 51.66
CO	60.80	107.69	+ 46.89
VOC	5.62	40.88	+ 35.26

Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Permitted Limits (TPY)
1,1,2,2 Tetrachloroethane	0.01
1,1,2-Trichloroethane	0.01
1,2,-Dibromoethane	0.01
1,3-Butadiene	0.04
1,3-Dichloropropene	< 0.01
2,2,4-Trimethylpentane	0.04
2-Methylnaphthalene	0.01
Acetaldehyde	1.37
Acrolein	0.82
Barium (and compounds)	< 0.01
Benzene	0.08
Biphenyl	0.03
Carbon tetrachloride	0.01
Chlorobenzene	< 0.01
Chloroform	< 0.01
Dichloromethane	< 0.01
Ethyl benzene	0.03
Formaldehyde	8.93
Lead compounds	< 0.01
Methanol	0.42
Naphthalene	0.01
n-Hexane	0.35
Phenol	< 0.01

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Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Permitted Limits (TPY)
Polynuclear Aromatic Hydrocarbons	0.01
Propylene oxide	0.02
Styrene	< 0.01
Toluene	0.16
Vinyl Chloride	< 0.01
Xylene (mixed isomers)	0.07
Zinc (& compounds)	0.01
Total	12.44

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

See draft permit Table 2

Prevention of Significant Deterioration/Nonattainment Review

Estimated actual emission increases due to the project in tons per year are as follows:

Pollutant	Contemp. Increase	Project Increase	Net Change	PSD *de minimis* Level	PSD Required
PM_{10}	-	+ 14.31	+ 14.31	15	No
SO_2	-	+ 1.59	+ 1.59	40	No
NO_x	- 115.0	+147.12	+ 32.12	40	No
CO	- 6.98	+ 106.41	+ 99.43	100	No
VOC	-	+ 35.75	+ 35.75	40	No
Lead compounds	-	+ < 0.01	+ < 0.01	0.6	No

After netting the Prevention of Significant Deterioration (PSD) review is not required for the modification of this permit.

Emissions of criteria pollutants from the Cogeneration Project do not increase more than the PSD significance levels. PSD analysis is not required. However, PM_{10}, NO_X, CO,

and VOC emissions increases are more than 50 % of their respective significance levels, then there is a reasonable possibility that the project will result in a significant emissions increase. Pre-project and post-project monitoring, record keeping, and reporting are required.

This is an attainment area and NNSR is not applicable.

MACT Requirements

This facility is a minor source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51.

Air Quality Analysis

Emissions associated with the facility were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

Dispersion Model(s) Used: <None>

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

Not applicable

VI. PERIODIC MONITORING

All periodic monitoring is conducted in accordance with state and federal regulations. See Specific Requirement of the draft Part 70 permit renewal and modification for monitoring requirements.

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VII STREAMLINED REQUIREMENTS

NA

VIII GLOSSARY

CAM - Compliance Assurance Monitoring rule – A federal air regulation under 40 CFR Part 64

Carbon Black - A black colloidal substance consisting wholly or principally of amorphous carbon and used to make pigments and ink.

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of

regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.